

What is claimed is:

1. A monitoring system for monitoring a parameter of a fluid stream, said system comprising:

- (a) a sample cell having inlet means communicating with said fluid stream and having outlet means for enabling fluid to exit said sample cell;
- (b) light source means for providing a collimated light beam;
- (c) detector means;
- (d) a first fiber optic cable for transmitting said light beam to said sample cell where said light beam is directed into said fluid stream and a signal is created corresponding to said parameter;
- (e) a second fiber optic cable for transmitting said signal to said detector means; and
- (f) means for measuring baseline variability of said parameter.

2. A monitoring system in accordance with claim 1, wherein said system comprises a plurality of said sample cells each associated with a separate fluid stream; and further comprising a pair of said first and second fiber optic cables in operative relation with each of said sample cells.

3. A monitoring system in accordance with claim 2, wherein said system comprises a single light source means and a single said detector means; and wherein said system further comprises means for selectively positioning said

light source means and said detector means in operative relation with a selected pair of said fiber optic cables.

4. A monitoring system in accordance with claim 1, wherein said light source means comprises a laser.

5. A monitoring system in accordance with claim 1, wherein said parameter comprises turbidity of a liquid.

6. A monitoring system in accordance with claim 1, wherein said parameter comprises particle counting of a liquid.

7. A monitoring system for monitoring a parameter of a plurality of liquid streams, said system comprising:

- (a) a plurality of sample cells each having inlet means communicating with one of said liquid streams for enabling liquid to enter said cell and having outlet means for enabling liquid to exit said sample cell;
- (b) light source means comprising a laser for providing a collimated light beam;
- (c) detector means;
- (d) a pair of fiber optic cables in operative relation with each said sample cell; wherein each said pair comprises: (i) a first fiber optic cable for transmitting said light beam to one of said sample cells where said light beam is directed into said liquid in said sample cell and a signal is created corresponding to said parameter, and (ii) a second fiber optic cable for transmitting said signal to said detector means;
- (e) means for measuring baseline variability of said parameter; and
- (f) means for selectively positioning said light source means and said detector means in operative

relation with a selected pair of said fiber optic cables.

8. A monitoring system in accordance with claim 7, further comprising a plurality of filter modules for filtering water; wherein the output of each of said filter modules is a stream of drinking water; and wherein said inlet means of one of said sample cells communicates with the output of one of said filter modules.

9. A monitoring system in accordance with claim 8, wherein said system comprises a single said light source means and a single said detector means; and wherein said system further comprises means for selectively positioning said light source means and said detector means in operative relation with a selected pair of said fiber optic cables.

10. A monitoring system in accordance with claim 8, wherein said light source means comprises a laser.

11. A monitoring system in accordance with claim 8, wherein said parameter comprises turbidity of a liquid.

12. A monitoring system in accordance with claim 8, wherein said parameter comprises particle counting.

13. A monitoring system for monitoring a parameter of a fluid stream, said system comprising:

- (a) a sample cell having inlet means communicating with said fluid stream and having outlet means for enabling fluid to exit said sample cell;
- (b) light source means for providing a collimated light beam which is directed into said fluid stream and a signal is created corresponding to said parameter;
- (c) detector means;
- (d) means for transmitting said signal to said detector means; and

(e) means for measuring baseline variability of said parameter.

14. A monitoring system in accordance with claim 13, wherein said light source means and said detector means comprise a particle counter for counting particles in said fluid stream.